

In the claims:

Claims 1-20 cancelled.

21. (new) A sintered high temperature superconducting (HTS) ceramic electric lead formed as three-dimensional (3D) HTS macro-ceramic solid product with honeycomb-like superconductive nano-architecture, comprising substantially uniformly aligned nano-size HTS ceramic crystal grains, silicate glass nano-thick films, and nano-size silver and/or inorganic dots that locate in nano-thick boundary areas of said superconductor ceramic crystal grains, and said nano-size films or dots provide honeycomb-like 3D nano-size network within said 3D HTS macro-ceramic solid product or HTS ceramic lead, and said electric lead is superconducting at liquid nitrogen cooling temperature.

22. (new) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS ceramic crystal grains are composed of  $YBa_2Cu_3O_{7-x}$  ceramic crystals, and an average number of oxygen atoms in a stoichiometric formula of  $YBa_2Cu_3O_{7-x}$  ceramic crystals, where "x" may be varied in a range  $0 < x < 0.3$ , is so that it provides superconductivity of the HTS ceramic crystal grains and said sintered HTS ceramic lead or 3D HTS macro-ceramic product.

23. (new) A sintered HTS ceramic electric lead as defined in claim 22, wherein said HTS lead has the  $YBa_2Cu_3O_{7-x}$  ceramic crystal grains have 10 – 25nm in length.

24. (new) A sintered HTS ceramic electric lead as defined in claim 21, wherein said ceramic crystal grains are fully dense sintered, which causes substantial decrease of the nano-thick grain boundary gaps and, consequently, facilitates Josephson junction or tunneling superconducting inter-grain effects, resulting in an electric current flux transfer between said sintered superconducting ceramic crystal grains that constitute superconductivity of the sintered 3D HTS macro-ceramics or said HTS ceramic electric lead.

25. (newly edited) A sintered HTS ceramic electric lead as defined in claim 21, wherein said 3D network of said silicate glass or silver or inorganic nano-size or nano-thick films and dots are configured, so that it facilitates 3D percolation and vortex-pinning network effects, resulting in an electric current flux transfer between said sintered superconducting ceramic crystal grains that constitute superconductivity of the sintered 3D HTS macro-ceramics or said HTS ceramic electric lead.

26. (new) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS lead comprises sintered  $YBa_2Cu_3O_{7-x}$  ceramics coating nickel-chromium or *NiCr* or 'nichrome' alloy substrate strand, said HTS strand has the efficient substrate/ceramics cross-section ratio of about 1 : 1, and said HTS strand is configured so that it is reliably transfers electric current of  $10 - 20\text{kA/cm}^2$  that 50 - 100x higher than engineering electric current carrying capability or capacity of the ordinary copper wire.

27. (new) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS macro-ceramics comprise  $YBa_2Cu_3O_{7-x}$  ceramics and achieve at liquid nitrogen cryogenic temperature an electric current carrying capability  $\geq 10^8$  Ampere/cm<sup>2</sup>.

28. (new) A sintered HTS ceramic electric lead as defined in claim 21, wherein said HTS macro-ceramics provide at liquid nitrogen cryogenic temperature substantial magnetic levitation or Meissner effect.

29. (new) A sintered HTS ceramic electric lead as defined in claim 21, wherein under mechanical impacts said HTS macro-ceramics have the enhancing fracture toughness and ductility.

Please provide the following new Abstract of the Disclosure: